DOCUMENT RESUME

ED 144 177 EA 009 860

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TITLE Curriculum Overload--Its Effect on Teaching the Basic Skills. Technical Report.
INSTITUTION Kentucky State Dept. of Education, Frankfort.
PUB DATE Jul 77
NOTE 43p.; Table 2 may not reproduce clearly

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Basic Skills; Elementary Secondary Education; Questionnaires; *State Surveys; Statistical Analysis; *Tables (Data); *Teacher Attitudes; Teacher Qualifications; *Teacher Responsibility
IDENTIFIERS *Kentucky

ABSTRACT

This report presents the results of a 1977 statewide survey designed to determine whether Kentucky's public school teachers feel they are adequately prepared to teach the basic skills and whether they feel adequate time is available to teach the basic skills. Data were gathered through questionnaires distributed to a random stratified sample of 200 teachers in grades 1-4, 200 teachers in grades 5-8, and 200 teachers in grades 9-12. Overall response rate was 66 percent, ranging from 79 percent for grade 5-8 teachers to 26 percent for grade 9-12 teachers. The report presents and analyzes the responses for each of the 22 questionnaire items in turn and then offers conclusions on their implications. Major findings of the study were that elementary teachers acknowledged a higher level of responsibility for basic skills instruction than did high school teachers. Although high school teachers felt they did not have sufficient time to spend on the basic skills, there was no evidence that this was a result of overloading the curriculum with courses such as consumer education and career education. (Author/JG)

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CURRICULUM OVERLOAD - Its Effect on Teaching the Basic Skills

Technical Report

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for

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Frankfort, Kentucky

July, 1977

EA 009 860

REPORT IN RESPONSE TO HOUSE RESOLUTION NO. 23

This resolution urges the State Department of Education to conduct a study of the elementary school curriculum to determine if adequate time is available for teaching the basic skills.

In reviewing the literature for this report it was found that considerable research has been conducted in various phases of the "back to basics" movement. While we are aware that basic skills test scores have declined over the past few years in the Commonwealth of Kentucky, this same thing is true nation-wide. The National Assessment of Education Progress (NAEP) recently concluded that 11 percent of the country's youth are functionally illiterate at the time they leave high school. This same descriptive research showed that only one out of one hundred seventeen year-olds could balance a checkbook.

The disturbing aspect here is that Kentucky is below the national average in the basic skills areas for junior high and high school students.

The median education level of the state's adult population is one of the areas we have addressed in this study. An abundance of research has indicated that there is a direct relationship between the educational level of the parent and the achievement of the student. Kentucky ranks 50th in the median educational level of adults 25 years and older. A recent study showed that 10 percent of a child's reading

achievement could be accounted for in the educational level of the parents (Bryant, 1974). Generally, individuals whose parents had little formal education had levels of achievement well below those of the rest of the nation, while individuals who came from well-educated families performed well above national levels. Students whose parents had less than a high school education were from 5-10 percent below the national average in achievement scores on the basic skills. Students whose parents graduated from high school were very close to the national norms while students whose parents had post high school education scored better than 5 percent above the national average.

We can safely assume that the majority of the parents of school age children would fall into the category of adults used by the Dicennial Census (25 years old and over). According to the 1970 Census, the median school years completed by Kentucky's adult population was 9.9 as compared to the national average of 12.2.

It would appear that one of the major concerns for education in the Commonwealth could well be that of improving the educational level of its adults. Research indicates that by doing this, the achievement and predictability of the younger generation will improve. Rock (1968) suggested that approximately 20 percent more of the criterion variance of predictability could be accounted for in individuals whose fathers were highly educated. The second most predictable group were those

individuals whose father had for the most part only completed high school. If Kentucky could strive to bring the median educational level of their adult population up to the national average of 12.2 years, this in itself would have a direct positive effect on students.

Another major area of concern which could possibly effect the achievement of students in the basic skills, could be the feeling of inadequacy by the teacher or a large portion of misplaced teachers. This by no means suggests that the individual teacher is wholly responsible for this inadequacy. However, probably the lion's share of the responsibility must rest with the administrative structure. Is the teacher in a position where he or she feels adequately prepared and comfortable or is the teacher in a position because by accreditation standards they are qualified to fill this position?

There are three types of certificates issued by the State Department of Education. These are certificates for teaching in the elementary, junior high and high schools. Most of the public school teachers hold one of two certificates, either the elementary or the high school certificate. There are very few junior high certificates issued. One reason for this is the overlapping of the elementary and high school certifications. A teacher holding an elementary certificate is certified to teach grades one (1) through eight (8), while a teacher holding a high school certificate is certified to teach grades seven (7) through twelve (12).

The certification requirements for the two most common certificates are considerably different. The elementary certificate requires the teacher to be better prepared in the basic skills areas. The specific courses of preparation are spelled out much more for this group by the requirements issued from the State Department of Education. The table below indicates those explicit requirements for the various certificates.

ACCREDITATION REQUIREMENTS

Required by	Elem.		J.H.	H.S.
Required by State for Accreditation	Sem. Hrs.[1] 75-76	Sem. Hrs.[2] 1980	Sem. Hrs.	Sem. Hrs.
School Music	3	4		
School Art	3	4		
Social Science	3	6		
Children's Literature (English)	3	6		
Mathematics	6	6		
Human Growth & Development	6	3	6	3
Basic Concepts Concerning Education	2	2	2	2
Fundamental Processes & Learning Mat.	12	6	6	2
The Middle School-Junior High School			3	
Student Teaching	8	8	8	8
Advanced Study in Teaching Reading		X		
Specialization areas			12-36	30-50

[1]Begin program during the 1975-76 school term.
[2]Begin program prior to the 1975-76 term and will complete by 9/1/80.
X Required for Standard Certificate

While no empirical data exists at the present time to verify this, one could surmise that this may be one of the causal effects of Kentucky's junior high and high school scores in the basic skills being below the national average. The fourth grade scores in basic skills for Kentucky students are above the national average.

One could logically suspect that a large proportion of the junior high teachers hold high school certificates. This could possibly result in those junior high students not getting the background in the basic skills which are necessary at the junior high level. This failure to acquire the basic skills at this level could account for the below national norm scores and would logically carry over into high school where less emphasis is placed on this area of education and more emphasis is placed in specialized areas.

In an attempt to answer some of the questions plaguing both politicians and educators across the Commonwealth of Kentucky, the Research Unit of the Office of Special Programs and Services undertook the random survey as outlined on the following pages.

S A M P L E

A random sample of six hundred teachers was drawn from the total population of Kentucky teachers. The sample was computer-generated through the use of a random numbers generator. It was stratified such that two hundred teachers teaching in grades one through four were included, two hundred teaching in grades five through eight, and two hundred teaching in grades nine through twelve. These levels are referred to here as elementary, junior high, and high school groups respectively. After the questionnaires were returned, it became necessary to add a fourth category, ungraded. This category includes all those questionnaires from which it was impossible to determine the level of school taught.

The questionnaires were mailed on March 14, 1977, with a postage-paid return evelope included. The cut-off date for returning the questionnaires was established prior to mailing by the Research Unit. This cut-off date was set on the fourth Monday following the week in which the questionnaires were mailed out. Monday was chosen so as to give an opportunity for any mail which accumulated over the week-end to reach the office. Table 1 summarizes the return rate.

TABLE 1: RATE OF RETURN ON BASIC SKILLS QUESTIONNAIRE

	No. Sent Out	No. Return	% Returned	% Total Return
(K-4) Elementary	200	154	77.0	38.9
(5-8) Junior High	200	159	79.5	40.2
(9-12) High School	200	52	26.0	13.1
Ungraded	-	31	-	7.8
TOTAL	600	396	66.0	100.0

As can be seen, 66 percent of the total number of questionnaires mailed out were returned. The return rate was best at the junior high level followed closely by the elementary return rate. Only 26 percent of the high school level teachers responded.

The 396 respondents reported an average age of thirty-eight with eight subjects not reporting age. The total sample reported an average of 12.5 years of experience with thirteen subjects not responding. In the total sample of returned questionnaires, 95.5 percent reported themselves as being white, and 83.3 female.

METHODOLOGY

Each of the twenty-two items on the basic skills questionnaire was analyzed separately. A comparison was made to determine if there were significant differences in the way in which the four groups of teachers responded to each question. A one-way analysis of variance was used to determine if there was significance between the groups. The major hypothesis stated in the null form was:

H_o: The mean responses of the four groups of teachers on a particular item do not differ from each other significantly.

The alternative to the null hypothesis could be stated as:

H_a: The mean responses of the four groups of teachers do differ significantly from each other on a particular item.

The .01 level of significance was set as the criterion for rejecting the null hypothesis (H_o). Thus, for teacher responses to be considered different from one another on a particular item, the F ratio must have exceeded 3.83 ($F \geq .01\ [3,392]$). Since this is generally considered a somewhat conservative approach, those items on which the F value would have exceeded the .05 level of significance ($F \geq 2.62$) are also considered briefly.

The use of the one-way analysis of variance reveals whether or not there is a significant difference among the means of all the groups being considered, in this case the four groups of teachers. However, when a significant F ratio is found, the one-way analysis of variance does not point out which groups differ significantly and which do not differ significantly.

When an F ratio significant at the .01 level was obtained, a follow-up analysis using the Scheffe' multiple comparisons procedure was undertaken to determine where significant differences among the four groups existed.

The Scheffe' procedure for testing any and all possible comparisons between means was used to statistically analyze the data here due to its being quite insensitive to departures from normality and homogeneity of the variance.[1] The formula used to calculate the appropriate F value was:

$$F = \frac{(M_i - M_j)^2}{MSS_w \ (1/N_i + 1/N_j) \ (K-1)}$$

where:

M_i = mean of group i,

N_i = number in group i,

M_j = mean in group j,

N_j = number in group j,

MSS_w = mean sum of squares within groups or sometimes referred to as the variation due to error,

K = the number of groups included in the original analysis of variance.

There were four groups of teachers included in each analysis of variance included in this report. Thus, when an analysis of variance yielded a significant F ratio, it was necessary to make six individual comparisons in order to compare all groups of teachers with all other groups of teachers included in this report. The resulting F values were compared with the .01 level of significance for the F distribution with 3 and 392 degrees of freedom.

[1] Roscoe, John T., Fundamental Research Statistics, Holt, Rinehart and Winston, Inc., N.Y., 1969, p. 240.

Therefore, a difference between two teacher groups was considered significant if the resulting F value was greater than or equal to 3.83.

The analyses of variance were computed through the use of SAS 76.2 Procedure GLM[2] using the general liniar model with one variable of classification.

[2]Anthony J. Barr and others, A Users Guide to SAS 76, Raleigh, N.C., Sparks Press, 1976, p. 121.

R E S U L T S

This section includes the results obtained through the analysis of the twenty-two items on the Basic Skills Questionnaire. The Scheffe' multiple comparisons procedure described in the last section was applied only to those analyses of variance where a F ratio significant at the .01 level or beyond was obtained.

Each of the four groups of teachers were asked to respond to the twenty-two items on a five point scale ranging from (1) Strongly Disagree to (5) Strongly Agree. For any item for which a teacher did not respond, the response was assumed to be (3) Uncertain. The mean responses for the four groups and the total sample are presented in Table 2. The purpose of the analyses of variance was to determine if the means of the four teacher groups on a particular question varied significantly according to previously stated statistical criteria.

Question 1: Teachers were asked to respond to the statement, "I feel the students should have acquired the basic skills prior to coming in my class." Table 3 includes the summary of the analysis of teacher responses to Question 1. As can be seen, an F ratio of 44.43 was obtained, which is significant beyond the .01 criterion. This can be considered evidence that the mean responses of the four groups of teachers are not the same.

Table 2.
Mean Responses Corrected for Omission

Question No. 1-22	Elementary N=154	Junior N=159	High N=52	Ungraded N=31	Total N=396
1	2.584	3.635	4.365	2.903	3.265
2	3.299	2.566	1.904	2.968	2.795
3	4.468	4.195	3.404	4.161	4.194
4	2.409	2.541	2.019	2.452	2.414
5	4.481	4.025	3.192	4.161	4.104
6	1.844	2.522	3.327	2.645	2.374
7	1.500	2.013	2.481	1.677	1.848
8	4.474	4.107	3.288	3.903	4.126
9	2.734	2.994	2.846	2.645	2.846
10	4.506	4.390	3.904	4.323	4.366
11	3.286	3.189	3.173	3.452	3.245
12	4.357	4.126	3.712	4.129	4.162
13	4.396	4.000	4.519	4.129	4.232
14	3.675	3.802	3.692	3.839	3.737
15	3.097	3.252	2.654	3.161	3.106
16	3.175	3.560	3.558	3.065	3.371
17	3.968	4.201	4.038	4.161	4.086
18	1.532	1.761	1.596	1.677	1.644
19	4.448	4.321	4.000	4.355	4.331
20	2.214	2.403	2.692	2.129	2.346
21	2.351	2.403	3.135	2.613	2.495
22	3.695	3.717	3.865	3.710	3.727

TABLE 3: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES ON ITEM 1

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	160.146	53.382	44.43	0.0001
Error	392	471.013	1.202		
Corrected Total	395	631.159			

Given the above findings, the Scheffe' multiple comparison procedure was applied to the mean responses on Question 1 to determine where significant and insignificant differences between groups existed. Table 4 includes a summary of the F ratios obtained and the mean responses of the four groups.

TABLE 4: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 1 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	23.964*	34.195*	.728	2.584
Junior High		5.791*	3.855*	3.635
High School			41.512*	4.365
Ungraded				2.903

* Significant at .01 level

All comparisons of the means of the four teacher groups with exception of the comparison of elementary and ungraded teachers was found to be significant at the .01 level. These significant differences are indicated by the asterisks following the F values reported in Table 4. By inspecting the means reported in Table 4, the mean responses to Question 1 get higher as level of school taught goes up. The ungraded group falls significantly below the junior high teachers and slightly above the elementary teachers. However, ungraded teachers do not differ significantly in their responses to Question 1 from elementary teachers.

Question 2: Teachers were asked to respond to the statement, "I have sufficient time to spend on the basic skills." Table 5 includes a summary of the analysis of teacher responses to Question 2 by level of school taught. As can be observed, an F ratio of 22.75 was obtained, which was again significant beyond the .01 level of significance. These findings can be considered evidence that the mean responses are different among the four groups of teachers.

TABLE 5: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 2

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	89.629	29.876	22.75	0.0001
Error	392	514.803	1.313		
Corrected Total	395	604.432			

All groups of teachers were found to differ significantly from each other with the exception of the ungraded teachers. As can be seen in Table 6, ungraded teachers differed significantly from only the high school teachers. They did not differ significantly from either the elementary or junior high teachers. At the same time, the elementary and junior high groups did differ significantly. As can be observed by inspection of the Question 2 means reported in Table 6, the mean response gets higher as the level of school taught gets lower. It is difficult to determine where the ungraded teachers fall in this spectrum.

TABLE 6: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 2 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	10.671*	19.205*	.718	3.299
Junior High		4.360*	1.064	2.566
High School			5.582*	1.904
Ungraded				2.968

*Significant at the .01 level

Question 3: Teachers were asked to respond to the statement, "I am obligated to provide training to assist students in acquiring the basic skills." Table 7 includes a summary of the analysis comparing teacher responses to Question 3 with level of school taught. As can be observed, an F ratio of 22.83, which is significant beyond the .01 criterion, was obtained. These findings would again lend support to a hypothesis that teachers at different levels of the K-12 structure feel differently about their responsibilities in teaching the basic skills.

TABLE 7: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 3

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	44.021	14.674	22.83	0.0001
Error	392	252.006	0.643		
Corrected Total	395	296.028			

The only group of teachers which differed significantly from other teachers was that of high school teachers. As can be seen in Table 8, high school teachers differed significantly from all of the other three groups of teachers.

It might be pointed out that had the .05 level of significance been set as the critical value instead of the .01 criterion, a significant difference would have existed between the elementary and junior high teachers. Inspection of the means presented in Table 8 again indicates that the elementary and junior responded significantly more favorably to the above statement.

TABLE 8: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 3 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	3.023**	22.814*	1.261	4.468
Junior High		12.710*	.016	4.195
High School			5.770*	3.404
Ungraded				4.161

*Significant at the .01 level
**Significant at the .05 level

Question 4: Teachers were asked to respond to the statement, "The teaching of basic skills cannot be stressed because of too many requirements such as drug education and consumer education." Table 9 includes a summary of the analysis comparing teacher responses to the above statement to level of school taught. As can be seen in Table 9, an F ratio of 2.75 was obtained. This value fell short of the .01 criterion (F.01 (3.392) = 3.83). It should be mentioned that had the .05 level of significance been considered the critical value, the above mentioned F ratio would have been considered significant (F.05 (3.392) = 2.62). Because the F ratio did not meet or exceed the .01 criterion, the follow-up analysis using the Scheffe' multiple comparisons procedure was not undertaken. However, using the .01 criterion, these findings cannot supply evidence to reject the null hypothesis that all teachers responded to the above statement in the same manner.

TABLE 9: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 4

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	10.711	3.570	2.75	0.0420
Error	392	509.370	1.299		
Corrected Total	395	520.081			

Question 5: Teachers were asked to respond to the statement, "I feel comfortable in teaching the basic skills as a part of my course work." Table 10 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of 28.86 is significant beyond the .01 criterion. These findings would support the hypothesis that teachers teaching at different levels of the K-12 structure respond differently to the above statement.

TABLE 10: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 5

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	66.144	22.048	28.56	0.0001
Error	392	302.612	0.772		
Corrected Total	395	368.755			

A follow-up analysis was undertaken since the above F value met the .01 criterion. As can be seen in Table 11, high school teachers differed significantly from all other groups of teachers. Neither the elementary nor junior high teachers differed from the ungraded teachers. But, the elementary and junior high teachers did differ significantly from each other. Inspection of the means reported in Table 11 again reveals a continuum of responses with elementary teachers responding most favorably to the above statement followed by junior high and high school teachers respectively.

TABLE 11: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 5 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	7.024*	27.888*	1.141	4.481
Junior High		11.740*	.207	4.025
High School			7.874*	3.192
Ungraded				4.161

*Significant at the .01 level
**Significant at the .05 level

Question 6: Teachers were asked to respond to the statement, "I do not have time to stress the basic skills. My major responsibility is the subject area I am teaching." Table 12 includes a summary of the analysis comparing teacher responses to the above statement with the level of school taught. As can be seen, an F value of 25.53, which is significant beyond the .01 criterion was obtained. These findings can again be considered as evidence supporting a hypothesis that teachers teaching at different levels of the K-12 structure respond to the above statement differently.

TABLE 12: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 6

Source	DF	Sum of Squares	Mean Square	F Value	PR F
Model	3	96.215	32.072	25.53	0.0001
Error	392	492.472	1.256		
Corrected Total	395	588.687			

A summary resulting from the application of the Scheffe' multiple comparison procedure is included in Table 13. In the analysis of Question 6, it was the elementary teachers who differed significantly from all other groups as can be observed in Table 13. The ungraded teachers did not differ significantly

from either the junior high or high school teachers. However, junior high and high school teachers differed significantly from each other. Again, there is a correspondence between level of school taught and mean response to the above statement. However, the high school teachers responded most favorably, followed by junior high and elementary respectively. The pattern observed here has only been observed in one case, the analysis of Question 1. Questions 1 and 6 are the only two items which imply a negative attitude toward teaching the basic skills. Where the statement in question implied a favorable attitude toward the basic skills, elementary teachers seem to respond most favorably and high school teachers responding least favorably.

TABLE 13: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 6 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	9.544*	22.390*	4.394*	1.844
Junior High		6.739*	.104	2.522
High School			2.397	3.327
Ungraded				2.645

*Significant at the .01 level
**Significant at the .05 level

Question 7: Teachers were asked to respond to the statement, "I do not have the training necessary to teach the basic skills." Table 14 includes a summary of the analysis comparing teacher responses to level of school taught. As can be seen in this table, an F value of 18.58 is significant beyond the .01 criterion. These findings support the hypothesis that teachers teaching at different levels of the K-12 structure respond differently to the above statement.

TABLE 14: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 7

Source	DF	Sum of Squares	Mean Square	F Value	PR F
Model	3	44.679	14.893	18.58	0.0001
Error	392	314.230	0.802		
Corrected Total	395	358.909			

A summary of the follow-up analysis using the Scheffe' multiple comparisons procedure is presented in Table 15. No group of teachers differed significantly from all other groups at the .01 criterion.[3] The high school teachers differed significantly from elementary and ungraded teachers, but not from junior high teachers. It might be pointed out that had the .05 level of significance been set as the critical value, high school and junior high teachers would have differed significantly. Junior high teachers differed significantly only from elementary teachers. Again, the difference between elementary and high school teachers is most evident. High school teachers responded most favorably while elementary teachers reacted least favorably to the above statement. Although responding favorably to the above statement would not seem to be a negative reaction to the responsibility for teaching the basic skills as would seem to have been the case in Questions 1 and 6, a favorable response to Question 7 would seem to imply a lack of confidence in one's ability to teach the basic skills.

TABLE 15: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 7 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	8.557*	15.549*	.336	1.500
Junior High		3.567**	1.217	2.013
High School			5.218*	2.48
Ungraded				1.677

*Significant at the .01 level
**Significant at the .05 level

[3]Roscoe, 1969, p. 241. "It is not at all uncommon to follow a significant finding by the analysis of variance with the Scheffe' procedure and find that no two means differ significantly."

Question 8: Teachers were asked to respond to the statement, "I am obligated to teach the basic skills as an integral part of my class." Table 16 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of 22.95 is significant beyond the .01 criterion. This, too, would be evidence that teachers teaching at different levels of the K-12 structure respond differently to the above statement.

TABLE 16: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 8

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	56.726	18.909	22.95	0.0001
Error	392	322.961	0.824		
Corrected Total	395	379.687			

The results of the follow-up analysis using the Scheffe' procedure are summarized in Table 17. As can be observed in this table, three of the six possible comparisons revealed significant differences applying the .01 criterion. Significant differences were observed between elementary and junior high teachers, between junior high and high school teachers, and between elementary and high school teachers. Again, a continuum seems to have been revealed with high school teachers responding least favorably to the above statement, followed by junior high teachers, and with elementary teachers responding most favorably. As has been the case in the analysis of the first seven questions, when significant differences were found, a similar kind of continuum has been observed where the statement would seem to reflect acceptance of responsibility for teaching the basic skills.

TABLE 17: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 8 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	4.262*	22.120*	3.404**	4.474
Junior High		10.633*	.437	4.107
High School			2.972**	3.288
Ungraded				3.903

*Significant at the .01 level
**Significant at the .05 level

Question 9: Teachers were asked to respond to the statement, "I feel that I should have been better prepared to teach the basic skills along with my preparation in my particular subject matter." Table 18 includes a summary of the analysis comparing teacher responses to the above statement with the level of school taught. As can be seen in this table, an F value of 1.56 which was not significant at the .01 level was obtained. (This value would not have been significant at the .05 level) These findings do not justify rejecting the null hypothesis. Thus, one should conclude that teachers at various levels tend to respond similarly to the above statement. Because the one-way analysis of variance did not result in a significant F value, no follow-up analysis was undertaken.

TABLE 18: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 9

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	6.659	2.220	1.56	0.1964
Error	392	556.944	1.421		
Corrected Total	395	563.604			

Question 10: Teachers were asked to respond to the statement, "All teachers should be trained in teaching the basic skills." Table 19 includes a summary of the analysis comparing teacher responses to the above statement with the level of school taught. As can be seen in this table, an F value of 7.73 is significant beyond the .01 criterion. These findings could be considered as supporting a hypothesis that teachers teaching at different levels of the K-12 structure react differently to the above statement.

TABLE 19: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 10

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	14.296	4.765	7.73	0.0001
Error	392	241.611	0.616		
Corrected Total	395	255.907			

A follow-up analysis using the Scheffe' procedure is summarized in Table 20. As can be observed in this table, only two of the six possible comparisons were found to be significant. High school teachers were found to vary significantly from both elementary and junior high teachers. Review of the means reported in Table 20 reveals that elementary and junior high teachers tended to respond more favorably to the above statement than did high school teachers. Again, the above statement would seem to reflect a feeling for high responsibility for teaching the basic skills. This pattern is consistent with what has been found in those items discussed to this point.

TABLE 20: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 10 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	.570	7.623*	.468	4.506
Junior High		5.008*	.063	4.390
High School			1.845	3.904
Ungraded				4.323

*Significant at the .01 level
**Significant at the .05 level

Question 11: Teachers were asked to respond to the statement,"I feel that my preparation was adequate to prepare me to cope with any deficiencies in the basic skills which a student may exhibit." Table 21 includes a summary of the analysis comparing teacher responses to the above statement with the level of school taught. As can be observed in this table, an F value of .59 which was not significant at either the .01 criterion or the .05 level was obtained. These findings can be considered evidence supporting the null hypothesis that teachers respond similarly to the above statement no matter at what level they are teaching. Because of the above insignificant F value resulting from the one-way analysis of variance, no follow-up analysis was undertaken. It is of interest to note that there seems to be no dominate reaction to the above statement. As can be observed in Table 2, the mean response for all groups of teachers was 3.245, an indication that teachers do not agree on the adequacy of their training in basic skills instruction. Response 3 indicates uncertainty in the five point scale used in this study.

TABLE 21: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 11

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	2.352	0.784	0.59	0.6230
Error	392	516.889	1.319		
Corrected Total	395	519.240			

Question 12: Teachers were asked to respond to the statement, I incorporate the basic skills into my regular course work." Table 22 includes a summary of the analysis comparing teacher responses to the above statement with the level of school taught. As can be seen in this table, an F value of 10.62 which is significant beyond the .01 criterion was obtained. These findings can be considered evidence supporting the alternative hypothesis that teachers at various levels of the K-12 structure react differently to the above statement.

TABLE 22: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 12

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	16.658	5.553	10.62	0.0001
Error	392	204.998	0.523		
Corrected Total	395	221.657			

A follow-up analysis using the Scheffe' procedure is summarized in Table 23. As can be observed in this table, only two of the six possible comparisons were found to be significant using the .01 criterion. High school teachers responded significantly lower than both elementary and junior teachers again, agreement with the above statement would seem to imply an acceptance of responsibility for teaching the basic skills. The results discussed here would seem to be consistent with those discussed to this

point. Where significant differences between groups of teachers have existed, elementary teachers have indicated a higher level of responsibility for basic skills instruction than have high school teachers.

TABLE 23: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 12 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	2.661**	10.307*	.855	4.357
Junior High		4.281*	.000	4.126
High School			2.152	3.712
Ungraded				4.129

*Significant at the .01 level
**Significant at the .05 level

Question 13: Teachers were asked to respond to the statement, "I am teaching in the area for which I feel best qualified." Table 24 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of 7.51 which is significant beyond the .01 criterion was obtained. These findings can be considered evidence thatteachers at various levels of the K-12 structure react differently to the above statement.

TABLE 24: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 13

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	17.324	5.775	7.51	0.0001
Error	392	301.302	0.769		
Corrected Total	395	318.626			

The results of the follow-up analysis using the Scheffe' procedure are summarized in Table 25. As can be observed in this table, only two of the comparisons yielded significant differences. Junior high teachers responded significantly less favorably to Question 13 than did either elementary or high school teachers. This can be observed by inspection of the means reported in Table 25. It should be pointed out that while junior high school teachers were not as sure as other teachers that they are teaching in the areas for which they are best qualified, their mean response was 4.000 or agree with this statement.

TABLE 25: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 13 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	5.318*	.255	.797	4.396
Junior High		4.575*	.187	4.000
High School			1.280	4.519
Ungraded				4.129

*Significant at the .01 level
**Significant at the .05 level

Question 14: Teachers were asked to respond to the statement, "The teaching of the basic skills is the responsibility of the elementary teacher." Table 26 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of .33 which was not significant at either the .01 or .05 level was obtained. These findings can be considered evidence supporting a null hypothesis that teachers at various levels of the K-12 structure react to the above statement in a similar manner. It is interesting to note that

the mean response of the four teacher groups combined was 3.737, tending to agree with the above statement placing the major responsibility for basic skills instruction at the elementary level. Because of the low F value obtained, no follow-up analysis was undertaken.

TABLE 26: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 14

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	1.499	0.500	0.33	0.8049
Error	392	591.188	1.503		
Corrected Total	395	592.687			

Question 15: Teachers were asked to respond to the statement, "Students are required to take too many subjects and consequently do not get an in-depth exposure to any one subject." Table 27 includes a summary comparing teacher responses to the above statement with level of school taught. As can be seen in this table, an F value of 3.80 which was not significant at the .01 level was obtained. (It should be noted that had the .05 level been considered the critical value, the above F value would have been considered significant.) However, using the .01 criterion, these findings cannot be used to refute the null hypothesis that teachers at various levels of the K-12 structure respond to the above statement in the same manner. It is interesting to note that the mean response of all four groups of teachers combined was 3.100 deviating just slightly above the uncertain response.

TABLE 27: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 15

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	14.107	4.702	3.80	0.0106
Error	392	485.439	1.238		
Corrected Total	395	499,545			

Question 16: Teachers were asked to respond to the statement, "If a student is weak in one or more of the basic skills, he/she should be placed in a remedial class rather than expecting the subject matter teacher to deal with the problem." Table 28 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be seen in this table, an F value of 4.36 which is significant beyond the .01 level was obtained. These findings can be considered evidence supporting a hypothesis that teachers at various levels of the K-12 structure respond differently to the above statement.

TABLE 28: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 16

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	16.285	5.428	4.36	0.0051
Error	392	488.147	1.245		
Corrected Total	395	504.432			

A follow-up of the above one-way analysis of variance is summarized in Table 29. As can be observed in this table, none of the six possible comparisons yielded a significant difference at the .01 level ($F \geq 3.83$).[4] (At the .05 level, elementary teachers did respond significantly lower than junior high teachers. Although the overall difference among the four teacher groups

[4] Ibid.

was significant at the .01 level, no difference between any two teacher groups was found to be significant at this level.

TABLE 29: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 16 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	3.105**	1.527	.804	3.175
Junior High		.000	1.702	3.560
High School			1.264	3.558
Ungraded				3.065

*Significant at the .01 level
**Significant at the .05 level

Question 17: Teachers were asked to respond to the statement, " Students should be required to exhibit specific competencies in the basic skills prior to promotion to the next level." Table 30 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be seen in this table, an F value of 1.95, which is not significant beyond the .01 criterion was obtained. Thus, no follow-up analysis using the Scheffe' procedure was undertaken. These findings can be considered to support the null hypothesis that teachers at various levels of the K-12 structure responded to the above statement in a similar manner. The mean response of all four teacher groups combined as can be observed in Table 2 was 4.086 indicating general agreement with the above statement. This is of special interest in light of the present concern over competency based education.

TABLE 30: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 17

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	4.567	1.522	1.95	0.1198
Error	392	306.514	0.732		
Corrected Total	395	311.081			

Question 18: Teachers were asked to respond to the statement,"I am teaching in an area for which I am not adequately qualified." Table 31 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of 2.21, which is not significant at the .01 level, was obtained. Thus, no follow-up analysis using the Scheffe' procedure was undertaken. These findings are considered to be evidence in support of the null hypothesis that teachers at various levels of the K-12 structure respond similarly to the above statement. The four groups of teachers combined had a mean response of 1.644 indicating general disagreement with the above statement. They feel adequately prepared for the area in which they are teaching.

TABLE 31: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 18

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	4.246	1.415	2.21	0.0845
Error	392	250.549	0.639		
Corrected Total	395	254.795			

Question 19: Teachers were asked to respond to the statement, "The basic skills should be incorporated into all classes when at all possible." Table 32 includes a summary of the analysis comparing teacher responses to

Question 19, with level of school taught. As can be observed in this table, an F value of 5.18 which is significant beyond the .01 criterion was obtained. These findings can be considered evidence supporting an alternative hypothesis that teachers at various levels of the K-12 strucutre respond differently to the above statement.

TABLE 32: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 19

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	7.841	2.614	5.18	0.0018
Error	392	197.823	0.505		
Corrected Total	395	205.664			

A summary of the follow-up analysis using the Scheffe' procedure is presented in Table 33. As can be observed in this table, only one of the six possible comparisons yielded an F value significantly beyond the .01 criterion. High school teachers responded significantly lower than elementary teachers. (Had the .05 level been applied, high school teachers would also have responded significantly lower than junior high teachers.) Again, on an item which would seem to express the importance of the basic skills in the individual teacher's classroom work, elementary teachers responded more favorably than did high school teachers.

TABLE 33: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 19 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	.833	5.150*	1.470	4.448
Junior High		2.665**	.020	4.321
High School			1.616	4.000
Ungraded				4.355

*Significant at the .01 level
**Significant at the .05 level

Question 20: Teachers were asked to respond to the statement, "High school teachers should not be expected to teach basic skills." Table 34 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be observed in this table, an F value of 2.60, not significant at the .01 level, was obtained. Thus, no follow-up analysis using the Scheffe' procedure was undertaken. These findings are considered to be evidence in support of the null hypothesis that teachers at various levels of the K-12 strucutre respond similarly to the above statement. The four groups of teachers combined had a mean response of 2.346 indicating a tendency to disagree with the above statement.

TABLE 34: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 20

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	10.875	3.625	2.60	0.0510
Error	392	546.728	1.395		
Corrected Total	395	557.604			

Question 21: Teachers were asked to respond to the statement, "A student's failure to acquire the basic skills is a reflection on the local school system." Table 35 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be seen in this table, an F value of 6.37, significant beyond the .01 criterion, was obtained. These findings can be considered evidence supporting an alternative hypothesis that teachers at various levels of the K-12 structure respond differently.

TABLE 35: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 21

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	26.273	8.758	6.37	0.0004
Error	392	538.716	1.374		
Corrected Total	395	564.990			

The follow-up analysis using the Scheffe' procedure is summarized in Table 36. As can be observed in this table, only two of the six possible comparisons yielded an F value significant at the .01 level. High school teachers responded significantly higher than either elementary or junior high teachers, as can be verified in Table 36. It is of interest to note that high school teachers feel most strongly of the four groups that student attainment levels of the basic skills reflect on the school system yet as reflected in their other statements, they except the least amount of responsibility for basic skills instruction of the four teacher groups.

TABLE 36: COMPARISON OF MEAN TEACHER RESPONSES TO QUESTION 21 BY LEVEL OF SCHOOL TAUGHT

	F VALUES			MEAN
	Junior High	High School	Ungraded	RESPONSES
Elementary	.051	5.797*	.430	2.351
Junior High		5.094*	.278	2.403
High School			1.284	3.135
Ungraded				2.613

*Significant at the .01 level
**Significant at the .05 level

Question 22: Teachers were asked to respond to the statement, "I feel that such subjects as drug education and consumer education are essential parts of a student's educational experience." Table 37 includes a summary of the analysis comparing teacher responses to the above statement with level of school taught. As can be seen in Table 37, an F value of .46, not significant at the .01 level was obtained. Thus, no follow-up analysis was undertaken. These findings can be considered evidence supporting a null hypothesis that teachers at various levels of the K-12 structure responded to the above statement in a similar manner. The mean response of the four groups of teachers combined was 3.727 indicating a tendency for teachers to agree with the above statement.

TABLE 37: ONE-WAY ANALYSIS OF VARIANCE COMPARING LEVEL OF SCHOOL TAUGHT WITH TEACHER RESPONSES TO ITEM 22

Source	DF	Sum of Squares	Mean Square	F Value	PR>F
Model	3	1.181	.394	.46	0.7143
Error	392	335.365	.856		
Corrected Total	395	336.545			

C O N C L U S I O N S

1. This indicates that both junior high and high school teachers agree that students should have acquired the basic skills prior to coming into their class. As one might expect, high school teachers feel significantly stronger about this than even the junior high teachers.

2. Elementary teachers have a tendency to agree that they have sufficient time to spend on the basic skills. Both junior high and high school teachers disagree significantly on this item, with high school teachers disagreeing significantly more than the junior high teachers.

3. High school teachers appear to feel less obligated to provide training to assist students in acquiring the basic skills than do junior high and elementary teachers.

4. All four groups of teachers tend to disagree with the statement that "The teaching of basic skills cannot be stressed because of too many requirements such as drug education and consumer education."

5. Both junior high and high school teachers feel less comfortable in teaching the basic skills than do elementary teachers.

6. Elementary and junior high teachers both tend to feel they have sufficient time for stressing the basic skills.

7. All four groups of teachers appear to feel that they are trained for teaching the basic skills. Elementary teachers would appear to feel like they were better trained than junior high teachers while high school teachers seem to be more unsure on this topic.

8. Both elementary and junior high teachers feel obligated to teach the basic skills, with elementary teachers feeling significantly more obligated

than the junior high teachers. High school teachers feel significantly less obligated to teach the basic skills than either of the other two groups.

9. All four groups of teachers tended to disagree with the statement that they felt they should have been better prepared to teach the basic skills along with preparation in a particular subject matter. However, a point of interest here is that while there was no significant difference between groups of teachers, they all were extremely close to the uncertain area which could indicate a need to be more certain of their preparation.

10. High school teachers do not feel as responsible for teaching the basic skills as either the elementary or the junior high teachers.

11. There seems to be a great deal of uncertainty among all teachers as to the adequacy of their preparation for teaching students deficient in the basic skills. This seems to support the comments made in conclusion 9 above.

12. High school teachers appear to feel less responsible for incorporating the basic skills into their regular course work than do either elementary or junior high teachers.

13. All four groups of teachers agreed that they were teaching in the area which they felt best qualified. However, junior high teachers were significantly less sure of themselves in this area.

14. All four groups of teachers tended to agree that the teaching of the basic skills was the responsibility of the elementary teacher.

15. All four groups of teachers were uncertain as to whether the students were required to take too many subjects and consequently do not get an in-depth exposure to any one subject.

16. There seemed to be a varied opinion as to whether a student deficient in the basic skills should be placed in a remedial class. While not significant

at the level chosen for this research, the data would indicate that elementary teachers were more opposed to this practice than the other groups of teachers.

17. All four groups of teachers tended to agree that students should be required to exhibit specific competencies in the basic skills prior to promotion to the next level.

18. All four groups of teachers appear to feel that they are teaching in an area in which they are adequately qualified. However, the junior teachers appear to be more uncertain in this respect than the other groups.

19. While all groups of teachers agreed that the basic skills should be incorporated into all classes when at all possible, high school teachers were significantly less in agreement than the other groups.

20. All groups of teachers tended to disagree with the statement that high school teachers should not be expected to teach basic skills.

21. High school teachers feel significantly stronger than the other groups that student attainment levels of the basic skills reflect on the school system.

22. All groups of teachers tend to agree that such subjects as drug education and consumer education are essential parts of a student's educational experience.

SUMMARY

The strongest theme which seems to have come into focus having looked at all twenty-two questions on the Basic Skills Questionnaire is the higher level of acceptance of responsibility for basic skills instruction by elementary as compared to high school teachers. In most cases where an item implied responsibility for basic skills instruction, junior high teachers fell between elementary and high school teachers. In most cases, the ungraded teachers responded to the twenty-two items in a manner similar to that in which elementary teachers responded. This is not to say that high school teachers deny responsibility in this area because in most cases, a degree of responsibility for basic skills instruction was expressed. It was not expressed as strongly by high school teachers as by elementary teachers.

From the information collected here, there is no evidence that the overloading of the curriculum with courses such as consumer education and career education results in a reduction in the amount of time a teacher has to spend on the basic skills. In fact, all those groups of teachers surveyed had a tendency to agree that these subjects, which have been referred to as curriculum overload, are essential parts of a student's educational experience. While high school teachers felt they did not have sufficient time to spend on the basic skills, there was no indication that this was a result of curriculum overload as defined. In analyzing the data here, it would appear that their lack of sufficient time is a result of their feeling less obligated to provide students with these skills.

While not significant in many cases, there seemed to be a preponderance of data to suggest that more junior high teachers are uncertain as to the adequacy of their preparation and competencies for teaching the basic skills.

Here again, one should consider that a large proportion of these teachers probably hold high school certificates which require less background in the basic skills areas for accreditations than do elementary teachers.

All four groups of teachers surveyed indicated agreement that students should be required to exhibit specific competencies in the basic skills prior to promotion to the next grade level. This supports the response by all groups that the basic skills should be incorporated throughout the students' school work.

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